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THE PLACE OF VETERINARY SCIENCE IN ANIMAL HUSBANDRY

The Association of Veterinary Teachers and Research Workers held a symposium on "The Place of Veterinary Science in Animal Husbandry" at the Royal (Dick) School of Veterinary Studies, Edinburgh, on Wednesday, January 6th, 1954. The accompanying article is a résumé of it.

MR. J. O. L. KING

Mr. J. O. L. King (Liverpool) introduced the subject by saying that the aim of good animal husbandry is to ensure that animals are always kept healthy. As there is a shortage of agricultural land animal husbandry is now being intensified, and this means that the animals are continually being required to mature more rapidly and yield more abundantly. This increased production has been achieved by an acceleration of the rate at which the excretory, digestive, and circulatory organs function, and has resulted in a reduction in hardiness. This means that animals have to live a controlled existence, consuming foods of a high nutritive value, and living in buildings which protect them from bad weather conditions. If these intensive methods are to succeed a high standard of management is required, for very little attention can be paid to the individual.

The general health of farm stock to-day may well give cause for concern, and the incidence of disease is often proportionately greater on the intensive farms than on the small general ones. On an individual farm the percentage of loss from disease can well be the factor which determines whether the farmer makes a profit or a loss; and the annual loss to the nation due to disease probably reaches a very high figure.

These facts are well recognised, but there appears to be some doubt about the part veterinary science should play in bringing about an improvement. Some people think that veterinary science should interest itself in treating disease when it occurs, and in eliminating infectious disease by detecting and removing infected individuals or by finding an effective method of immunisation. Those who support this view consider that by working along these lines a future age in which most infectious diseases could be eradicated, or at least effectively controlled, is a possibility, and that this should be the aim of veterinary science.

But the control, or even the elimination, of infectious disease will not remove all threats to animal health. Losses may result from disorders that are directly associated with husbandry practices, and in which infection, even if it is present, plays but a secondary part. The genetic make-up of animals, the environmental conditions, and the feeding, can all play important parts in regulating the health of stock. The view is sometimes expressed that if veterinary science were to advise on these aspects of husbandry it would lead to reduced efficiency in disease control. It is claimed that this would not be in the best interests of the profession itself. Another opinion is that agricultural science, with its concern with the management of crops as well as of animals, is also too fully occupied to deal with the vast problem of animal welfare, and it is suggested that the establishment of an additional profession—that of animal husbandry—is the only reasonable course remaining. But if the aim of animal husbandry is to obtain the maximum productivity from every individual, and to create, under each system of farming, an environment as favourable as possible to the individual, any factor which prevents the attainment of this ideal is of interest to veterinary science, as a knowledge of physiology and preventive medicine is required to remedy any faults. A diseased animal, or one which is not thriving to its maximum, must be considered as a symptom of some departure from good husbandry which veterinary science can play its part in rectifying.

MR. J. S. S. INGLIS

Mr. J. S. S. Inglis (Glasgow) then dealt with the subject in relation to cattle. He pointed out that the majority of the members of the veterinary profession earn most of their livelihood in the prevention, treatment, and control of cattle diseases. In the past the main work of the profession had been in the treatment of sporadic disease as it arose, and in the control of the major contagions. In the British Isles, insular position, national policy, and efficient veterinary service combined have resulted in freedom from certain major contagions which still play havoc in many parts of the world. The profession still has an important part to play in preventing the reintroduction of these diseases from abroad. Progress in the control of certain contagious diseases, such as bovine tuberculosis and Johnes disease, has been less rapid because of their insidious nature. However, tuberculosis is now being eradicated at an ever-increasing pace, and doubtless the complete eradication of this disease will be considered one of the achievements of our time. In the United Kingdom the eradication and control of the major contagious diseases of cattle has proceeded a long way, but in many parts of the Colonial Empire the position is much less advanced, and many years of resolute endeavour lie ahead of the profession.

The intensification of agriculture has been accompanied by an increased number of problems. Some, such as ketosis, seem to be associated with the interplay of nutrition and high milk production; others, like bloat, to an interplay between nutritional and management factors; still others, for example hypomagnesaemia, seem to be related either to straight nutritional diseases or conditioned deficiencies. The effective control of these groups of diseases will depend largely on the elucidation of the precise environmental and nutritional factors involved in their aetiology. The development of farms in association with the veterinary schools should prove a useful step in this connection.

The veterinary profession, with its knowledge of disease, reproductive physiology, animal breeding, nutrition and management should control all aspects of artificial insemination, otherwise there will be a danger that cattle breeding stations will become centres for the dissemination of certain bovine infections. The increased skill in pregnancy diagnosis, and in the recognition of the various types of infertility, has enabled the profession to supply a service of considerable economic importance.

The so-called animal husbandry expert employed to-day in the advisory services is in an extremely weak position, for he has no specialised training in animal health—and a large proportion of the problems in animal husbandry are health problems. The proper person for such posts is a veterinary surgeon with special knowledge of animal husbandry: he is quite capable of advising on production as well as health, both at home and in the colonies.

Mr. P. L. Shanks

Mr. P. L. Shanks (Bucksburn), speaking on pigs, pointed out that to obtain information on the husbandry of pigs it was necessary to consult books mainly by agriculturalists. An outstanding exception was William Youatt, a veterinary surgeon, who produced a comprehensive book on the pig in 1846, shortly before he died. Since then there has been a tremendous advance in knowledge of pigs. All the British breeds of pigs have been established. During the past 50 years more research work has gone into compounding rations for pigs than into any other branch of pig husbandry. War conditions excepted, the standards of feeding are now reaching a stage of maximum efficiency so far as convertibility of food is concerned. But new problems for the veterinary surgeon are arising which may be the consequence of attempts to produce even greater efficiency; these include gut oedema, urticaria, terminal ileitis, and some forms of necrotic enteritis. The introduction, too, of antibiotics into the food may also provide fresh problems. It is suspected that the feeding of sows just prior to, and just following farrowing, plays an important part in the milk production of the sow. Deaths in young pigs at birth and shortly after birth may be due to feeding errors. It is the duty of the veterinary profession to consider these possibilities, and to show whether or not they are correct. At present it is uncommon for the profession to carry out investigations into feeding-stuffs apart from cases where the food is suspected to have caused poisoning.

The management of pigs has improved very considerably during the last 100 years. At one time it was considered that only one litter a year could be reared, and that during the summer months. Now young pigs are reared all the year round, and a stage has been reached when attempts are being made to obtain three litters from a sow each year. Considerable improvements have been made in housing, and the use of artificial heaters for young pigs has done much to reduce mortality among them. So far as pig husbandry in general is concerned the veterinarian has, in the past, played a comparatively minor part in raising the standard. The farmer has been the main agent of improvement in breeding, while the scientist has been responsible for most of the improvement in feeding. The veterinary profession has helped the improvement in housing, while management has been improved by all parties concerned.

The farmer is now calling in his veterinary surgeon early to treat diseased animals. He knows that many diseases will respond to the sulphonamides and antibiotics if they are applied early. He is also asking for suggestions on disease prevention. A sound knowledge of what constitutes health and disease can only be acquired by the continual accumulation of experience from normal and diseased animals, and by frequent examination of *post-mortem* material. The young graduate should acquaint himself as fully as possible with normal animals so as to be able to recognise abnormalities when they appear, then, by accumulating experience, he will be in a position to give sound advice when the necessity arises.

Mr. A. L. Wilson

Mr. A. L. Wilson (Auchincruive), dealing with sheep, pointed out that the science of sheep husbandry has been neglected in Britain compared with other countries. In 1920, with the founding of the Animal Diseases Research Association, the first serious attempt was made to put the investigation of sheep diseases on a sound scientific basis. Since then much has been accomplished, and the prophylactic treatments for louping ill and braxy, discovered by the A.D.R.A., together with the work of Dalling on lamb dysentery, have made sheep farming possible on many of the Scottish hills. Although the major bacterial and viral epizootics are no longer the serious problem they once were, much still remains to be done, particularly with regard to the control of metabolic and parasitic diseases, and, more generally, with the application of the results of research to the different systems of sheep husbandry. In this era of intensified agriculture the high cost of imported feeding-stuffs, the loss of agricultural land for building houses and factories, and the activities of the Forestry Commission on hill land have compelled farmers to make the remaining fields, and the livestock using them, more efficient producers of food. Hitherto the veterinary profession has been concerned with disease problems, but the time has come when it must pay more attention to the study of husbandry. There are those who contend that the study of the healthy sheep is not the profession's concern; but veterinary surgeons are the people best equipped to correlate any programme of increased production since the health of the animals will inevitably be involved. Veterinary science is indissolubly linked to agriculture, and animal husbandry must be regarded as part of preventive medicine. The prevention of disease, however, presupposes a thorough understanding of the predisposing causes, and too often, while investigating diseases in the field, veterinary surgeons are left wondering why they should have occurred in the first place. Helminthiasis in hill sheep might not be of such great importance if there were no predisposing causes such as semi-starvation and mineral deficiencies. Diseases quite often appear in sheep after the flock has been moved on to a better pasture, or after the pastures have become luxuriant. Pulpy kidney disease, for example, occurs after a flush of grass; liver fluke disease becoming prevalent after draining and liming a hill pasture, and pneumonia appears under conditions of intensive grazing.

The problem of increasing sheep production on the Scottish hills is immense, and the difficulties are not readily appreciated. The profession can best help the sheep industry, and in particular the hill sheep farmers, by the provision of increased facilities for the diagnosis and treatment of disease. This would save the lives of many sheep and thereby increase production. In the matter of nutrition, advice should be given on the possibility of reseeded pastures causing parasitic gastritis due to intensive grazing. In any attempts to improve hill sheep by breeding, emphasis must above all be placed on hardiness and constitution; and the first requirement is an animal which will survive the rigorous winter climate. To this end use might be made of specially equipped metabolism houses in which the animals' reactions to various temperatures can be studied in detail. The hereditary diseases of sheep must also be investigated so that disease-carrying strains can be eliminated. The artificial insemination of ewes with semen from specially selected tups could also be considered, while semen examination of tups before turning them out to the hill in November would determine whether they would be able to breed.

There is a need for specialists in the many aspects of sheep husbandry; but since the object of all their investigations will be to obtain more knowledge of the living animal it is right that their work should be correlated by the veterinarian. Departments or Institutes of Preventive Medicine and Animal Husbandry should be created in all our teaching schools under the direction of a veterinary surgeon with professorial rank, and nutritionists and geneticists could be employed to study their respective subjects, while veterinary surgeons would investigate the predisposing causes of disease. The cost of these institutes would be justified when it is considered that in Scotland there are 7,273,407 sheep, and of these 3,101,822 are breeding ewes. In 1951 over £31,000,000 worth of mutton and lamb was imported into Britain, and these imports could be greatly reduced by making the present flocks more efficient producers.

The Papers Summarised

Two speakers were invited to summarise both the papers and the general discussion.

Dr. Wm. Holmes (Hannah Institute, Ayr) presumed that he had been invited as a member of the much maligned race of animal husbandmen to form an official opposition! He wanted to remind the profession that the rôle they have to play in animal husbandry is not invariably the leading rôle. In formal training it is probable that veterinary students receive more instruction on animal husbandry, animal management, and related subjects than do their agricultural brethren; but such subjects as cattle nutrition, pasture management, economics and accounting are dealt with more fully in the agricultural degree course. In some respects it would be an advantage to train veterinarians with special qualifications in animal husbandry, but apart from the practical difficulty and expense of such a course it might be considered to be "gilding the lily."

After training there was little doubt that the practising veterinary surgeon on his daily rounds was at least as likely, if not more likely, to be asked for advice on animal husbandry than the animal husbandry adviser. He might often be required to advise on those aspects dealing with the prevention of disease, but he would be less competent than the trained animal husbandman to advise on such matters as stocking in relation to farm size, feeding policy, breeding plans, or milking techniques. Active and willing co-operation between the veterinarian and the animal husbandman were essential for the best care of the nation's livestock. Consideration might well be given to the possibility of establishing a form of health insurance for cattle. Not only would this ensure that illnesses were dealt with more expeditiously, and in many cases prevented, but it would introduce a much needed thread of continuity into the life of the veterinary surgeon in practice.

The papers contained a wealth of opinion and a dearth of fact. The lack of fact was shown by one speaker who referred to higher incidence of disease on intensively run farms, but gave no figures to support the claim. This lack of concrete evidence was often apparent in discussion on the influence of intensive grassland methods on animal health, and it was a relief to hear Dr. Russell Greig say in the discussion that there was no definite evidence that intensive grassland management had any harmful effect on animal health. This agreed with experience gained in running the experimental farm at the Hannah Dairy Research Institute.

The general consensus of opinion at this meeting was that the most urgent need is further comprehensive investigation by teams of animal husbandmen, veterinarians, plant physiologists, soil chemists and others, so that the effects of new methods and management factors can be first of all segregated, and thoroughly investigated, and then the appropriate management methods developed to make full use of recent advances in agricultural and veterinary science.

Dr. S. J. Edwards (Compton) said that he was faced with considerable difficulty in attempting to summarise a discussion on a subject having so wide a scope. It was frequently overlooked that agricultural practice, including that of animal husbandry, was sometimes empirical and based on traditional methods. It was difficult to see, therefore, how veterinary science, or for that matter any other science, could help in advancing the more traditional methods of agriculture. To veterinary endeavour must be credited in the first place the control of scheduled diseases which enabled this country to develop its animal breeding even in times when the industry itself was in a depressed state. It had rightly been stressed that the constant aim of agriculture was to increase production by the selection of better animals, by careful feeding and management, and by the preservation of health. During war, production could only increase in this country of limited acreage by using more intensive methods, so that more animals might be kept per acre of land in order to free more land for the production of cereals for human food. Although it might be contrary to veterinary surgeons' principles to allow more confinement of stock, this had to be adopted in wartime, and, therefore, a challenge was made to our ingenuity to devise new methods of disease control.

The veterinary surgeon, by his training, was well qualified to advise on matters pertaining to feeding, housing, and management of stock and in the field of preventive medicine, especially, an intimate knowledge of these subjects was essential. The farmer of to-day had become more conscious of the maintenance of health, and was anxious to co-operate with his veterinary surgeon in adopting these methods for the prevention of disease.

In the field of original research there was not much information from purely veterinary sources on these subjects, and this might be explained largely by the fact that there has been a tendency to sectionalise research on animals into health and disease sub-headings. This was not the correct attitude, since there was little to divide the two states, and certain chronic insidious diseases might often affect the animal in apparent health. If the profession was to carry out fundamental work on the subject of animal husbandry it must be accorded more scope in this field by those responsible for directing research in this country. For that reason it should be granted more authority in the councils existing for the planning and financing of research, and due recognition of the veterinary qualification accorded. The prosecution of this research involved more favourable conditions for the study of all farm livestock than had been available in the past, so that observations on the flock or herd might be made.

Agriculture, Dr. Edwards concluded, was an ever-changing industry and should adapt its methods to the prevailing needs of the nation and to the dictates of new knowledge. In order to contribute fully towards any new developments veterinary research workers should be able to have easy access to study animals in their natural environment, which also involved adequate facilities to study their management, housing and feeding.

ANAEMIA IN PIGLETS ASSOCIATED WITH A COPPER DEFICIENCY

BY

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INTRODUCTION

One of the forms of anaemia which affects three- to four-weeks-old piglets has been ascribed to a nutritional origin. It was associated with indoor rearing or with the cold periods of the year when the piglets were disinclined to leave their pens. Foot (1938) was able to prevent the condition by dosing the piglets before they were three weeks old with iron salts. The addition of a copper salt did not appear to be necessary. Venn (1947) estimated that 250 to 350 mg. of iron were required by the piglet during its first three weeks of life and towards this amount some 23 mg. were supplied in the sow's milk. Iron salts, and green food rich in iron fed to a sow during pregnancy appeared to exert little influence on the total quantity transmitted to the piglets through the placenta.

To augment the iron supplied in the sow's milk such practices as putting soil into the pens, oral administration, and painting the sow's teats with ferrous salts have been adopted. Recently iron in forms which are readily absorbed into the blood has been used either orally or by injection.

In spite of the success achieved with iron salts in preventing anaemia, Schultze considered the addition of copper to be beneficial. Lakey (1952), by feeding a copper deficient diet, produced an anaemia in young pigs which showed morphological and biochemical similarities to that of an iron deficiency. A microcytic hypochromic condition of the red cells and a moderate leucopenia with a more significant neutropenia was observed. Gubler (1952) suggested that in copper-deficient pigs there was an impaired ability to absorb iron from the gastro-intestinal tract, an incomplete mobilization of iron from the tissues, and an inability to use parenterally administered iron for haemoglobin synthesis.

A case of anaemia, which presented features resembling those observed by Lakey and in which there appeared to be circumstances when iron therapy was inadequate for preventing piglet anaemia, has been investigated.

HISTORY

Losses had occurred in pure-bred Wessex piglets four to seven weeks old and reared indoors. *Post-mortem* examination showed lesions associated with anaemia, although iron in capsule or given intramuscularly had been a routine preventive measure.

On first visiting the farm, two litters aged four to five weeks were observed to have a clay-coloured diarrhoea. The piglets were in good bodily condition, but haematological findings indicated a severe anaemia. Iron was given intramuscularly. During the following 18 days nine pigs died and the remaining eight lost condition, but with the use of creep-feeding slowly overcame the anaemia.

On a second visit three 24-day-old survivors of a gilt's litter were found to have severe anaemia. *Post-mortem* examination on these, and two which died the day before, confirmed the clinical and haematological results. All the losses had occurred in litters from gilts which had themselves been born and reared on the premises. The gilts had been kept indoors until used for breeding and then moved to a straw yard. At no time had they access to grass.

The next sow to farrow was due to have her second litter. She had been bought as a store and from 12 weeks of age had been kept indoors or in a straw yard. She had been fed a normal proprietary diet without the addition of extra minerals. She had farrowed eight piglets in her first litter and reared seven.

OBSERVATIONS ON LITTER

The sow had eight piglets in her second litter and these were blood tested within 12 hours of birth, showing normal haematological levels. Preventive anaemia treatment was undertaken by injecting a proprietary iron preparation containing ferric phosphate intramuscularly when the piglets were four days old.

At nine days old, the piglets appeared well and were growing satisfactorily. Haematological results showed a marked fall in red cell counts and haemoglobin levels (Graph 1).

A second injection of iron was given the following day and the piglets examined a week later. Their growth rate continued to be satisfactory, averaging between 11 and 12 lb. on their 17th day. Haematological results showed a further drop in blood levels and the pigs appeared anaemic.

It was decided to dose each piglet orally with ferrous sulphate for five days. After a further four days, the piglets now being 26 days old, blood samples were taken but no improvement in the red cell or haemoglobin levels was noted. Although food was available, no attempt was made to eat anything, the litter looked pale, were losing condition and preferred to lie under the infra-red ray lamp.

The litter was divided into two groups ; one received a copper sulphate solution orally for five days, and the other group were dosed with a ferrous and copper sulphate solution for the same period. Three days after dosing had finished, blood samples showed a marked change with increases in the red cell counts and haemoglobin levels. The colour of the skin became pink, the piglets were more lively, were taking exercise and had begun to creep-feed. There was no visible difference between the two dosed groups.

Although the subsequent growth rate was unsatisfactory, the blood soon became normal without the necessity of further medication.

HAEMATOLOGICAL RESULTS

Blood examinations on litters aged four to five weeks showed haemoglobin levels of 1 to 2·5 grammes per 100 c.c. blood, red cell counts averaging 2,000,000 per c.mm., low cell volumes but leucocytes within the normal range. A feature was the lack of reticulocyte and nucleated red cell response. Samples from the dams of the litters showed normal levels.

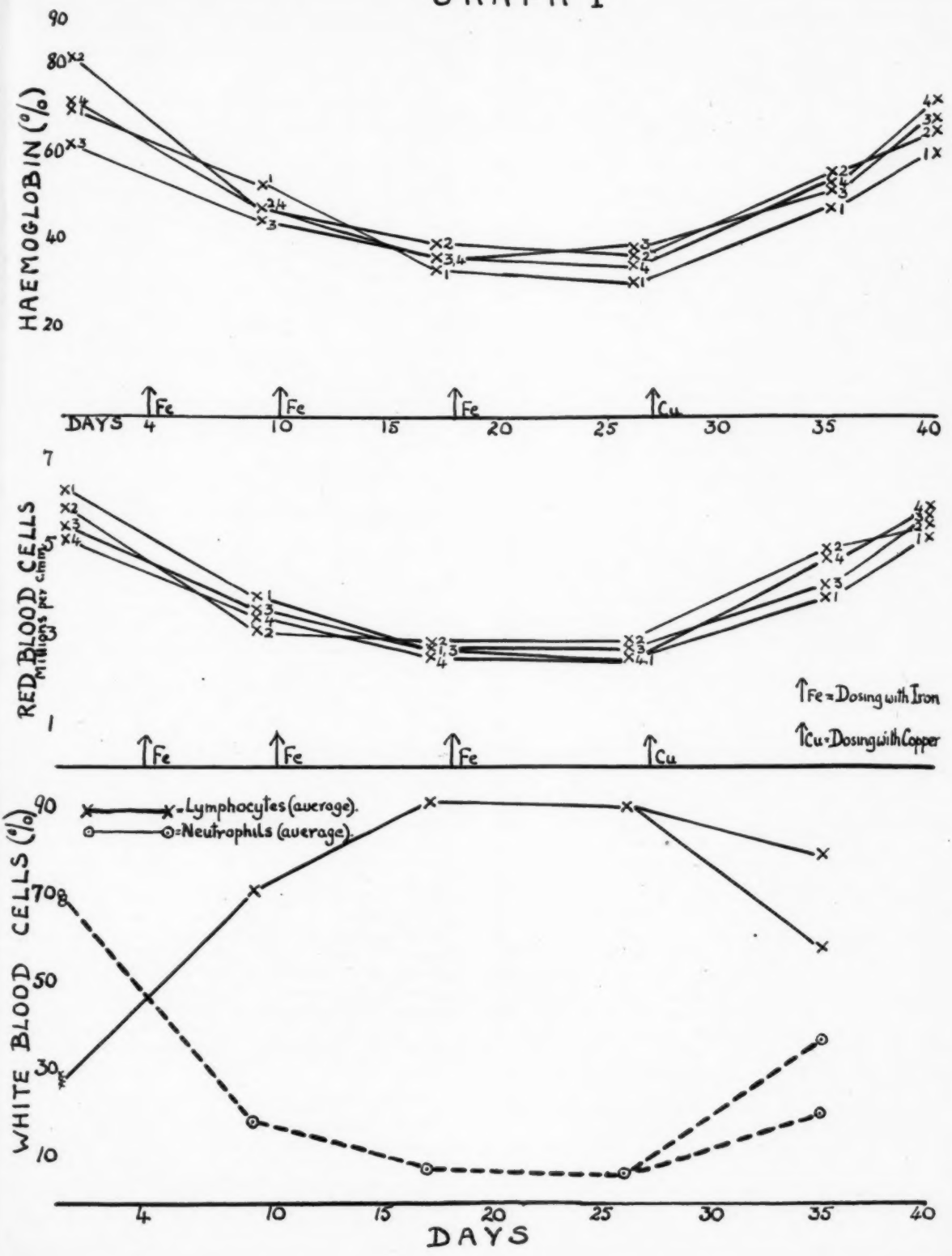
Observed Litter

Red and white cell counts, cell volume, reticulocyte and nucleated red cell counts, white cell differentiation and haemoglobin levels were determined. The eight newborn piglets all showed figures within the normal levels.

In the graph is shown the decline and the lack of response of haemoglobin and red cells to repeated iron dosage, and the rise following the use of copper.

Blood samples, taken just prior to dosing with ferrous sulphate orally, showed 20 per cent. hypochromic red cells, 10 per cent. of these being ringed. Their size appeared to be normal and no basophilic staining was noted. A number of nucleated red cells were present, varying from 18 to 50 per cent. of the leucocytes, while the reticulocyte response was low, 6 to 12 per cent. In haemolytic disease due to iso-immunisation the reticulocytic response matches or exceeds that of the nucleated red cells, and in some cases is over 60 per cent.

GRAPH I


HAEMOGLOBIN (%)
90
80
60
40
20
DAYS
4
10
15
20
25
30
35
40
Fe
Fe
Fe
Cu
RED BLOOD CELLS
Millions per c.mm.
7
5
3
1
↑Fe = Dosing with Iron
↑Cu = Dosing with Copper
WHITE BLOOD CELLS (%)
×—× = Lymphocytes (average).
o—o = Neutrophils (average).
90
70
50
30
10
DAYS

Dosing with a solution of ferrous sulphate did not alter the blood picture.

A quick change was observed, however, after using copper sulphate. The red cells appeared larger than normal, very few were hypochromic (1 to 5 per cent.) and none was ringed ; nucleated red cells varied from 1 to 15 per cent., while the reticulocytic response varied from 1 to 20 per cent. The red cell counts and haemoglobin levels soon came into the normal range. There was no difference between the group receiving copper and the group having copper and iron.

A feature was the effect on the neutrophil to lymphocyte ratio. Venn (1944) found that an average of 65 per cent. neutrophil at birth changed over after an interval of two to three weeks to a dominant lymphocyte count in the ratio of 60 : 30 until the litters were weaned. In the litter under observation, the lymphocytes came into the majority by the ninth day in a ratio of 72 : 24. Subsequently this increased to over 90 per cent. and in one case even reached 97 per cent. Following the dosing with copper there was a rapid drop to almost normal levels.

Graph I has been used to give a composite diagram of various readings obtained with the litter. The average of the results of individuals has been recorded. Haemoglobin was estimated with a Sahli haemoglobinometer and the figures expressed as a percentage (14 grammes of haemoglobin = 100 per cent.). Red cells were recorded in millions per c.mm. and the types of white cells as a percentage.

Discussion

Among the features of this case were the severity of the anaemia in spite of routine preventive measures and, after diagnosis had been made, the failure of many pigs to overcome the condition when given further treatment. *Post-mortem* examinations on the older pigs had shown anaemia, very enlarged hearts, and usually enlarged spleens.

Although the conclusions reached have been made from the study of one litter, the history suggested that there was some contributing factor involved. It was highly probable that the degree of anaemia in the litter under experiment, as evidenced by the red cell counts, would have been greater if iron had not been repeatedly given. This was suggested by the haematological results observed in three four-week-old piglets, the survivors of one litter which had received iron when three days old. These had red cell counts averaging 1·7 millions per c.mm. and failed to register the haemoglobin on the Sahli haemoglobinometer. An interesting point with the experimental litter was the large number of nucleated red cells present, but not a corresponding number of reticulocytes. After giving copper the nucleated red cells decreased and on average the reticulocytes increased. These results agree with those obtained by Lakey (1952) with copper-deficient pigs.

Gubler (1952) has suggested that there is incomplete mobilisation of iron from the tissues, and the bone-marrow is unable to use parenterally introduced iron for haemoglobin synthesis if copper is deficient. In the experimental litter large quantities of iron must have been held in store in the tissues but it was not until copper was given that the iron was used, and then the haemoglobin levels and red cell counts rose rapidly, so that within eight days they had reached levels comparable with the birth figures.

The irregular intervals between blood sampling did not permit any observations on the possibility of a leucopenia developing, but marked neutropenia occurred and the lymphocytes were accompanied by many plasma cells. Copper appeared to play a part in reducing the degree of neutropenia.

Summary

A hypochromic anaemia accompanied by a neutropenia was observed in a litter of piglets on a farm where the use of iron therapy failed to prevent anaemia from developing. The administration of copper to the piglets rapidly corrected the hypochromic anaemia.

Acknowledgment.—I wish to thank W. J. Guthrie for bringing my attention to this case.

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PROGESTERONE IN FUNCTIONAL INFERTILITY OF CATTLE

BY

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The use of progesterone as a prophylactic against " spontaneous " and possibly habitual abortion in human medicine has been recognised since 1935 (Krohn *et al.*), also Mazer & Israel, and Vaux & Rakoff, etc. Besides this treatment of an established pregnancy, administration of this hormone, justifiable on theoretical grounds, has been recommended in the treatment of functionally infertile women (Mazer & Israel).

In the veterinary field, McDonald, Nichols, & McNutt have shown experimentally that 100 mg. progesterone daily will maintain pregnancy in cows from which the corpus luteum was expressed from the 92nd to the 163rd day, controls aborting. Murray has reported a remarkable clinical case history of a cow which regularly carried to term when treated with the hormone, and aborted fairly early equally regularly when left untreated. Similar results have been reported in the mare. Laing's experimental results on early foetal death in cattle, showing that this could occur, either in time to allow a return to service in three weeks, or to produce a somewhat later return, seemed consistent with the possibility of a progesterone deficiency about the time of implantation, and indicated that a controlled clinical treatment trial with this hormone under such circumstances might be worth carrying out, especially as the observations of Olds & Seath and those of Stewart from the field, confirmed Laing's experimental observations.

The Present Investigation

The trials reported here were spread over three years, beginning in January or early February ; Herd 1 being investigated in 1951, Herd 2 in 1952, and Herd 3 in 1953. The actual operation of tablet implantation with 100 mg. doses, was carried out in every case by the practising veterinary surgeon concerned, at from three to five days after service.

Herd 1

Twelve Guernsey heifers had received from 4 to 18 services each, 9 or 10 on the average. Their returns to service were usually, though not always, at regular intervals. The presence of a recognised genital infection seemed unlikely, since the herd had long been self-contained. Chorionic gonadotrophin "Lutormone" treatment of several animals had failed to procure pregnancy, as had intra-uterine irrigation with iodine of most of the heifers. Some gave clinical evidence of partial failure of the luteinising function. Examples of this were the absence of any palpable corpus luteum at six days after heat, and the existence of cystic corpora lutea which could be ruptured like a follicular cyst although bearing in this case an easily felt ovulation scar. Semen from the two bulls appeared normal. Nutrition appeared sound; there was free access to mineral licks, and stock were run on an ample acreage of old pasture.

The animals were divided into two groups of five and one group of two. The first large group was given progesterone treatment without delay after first service, with results as shown in Table I, Section i. In the second large group, animals were "missed" as they returned, the corpus luteum expressed at 7 to 10 days after heat, and service permitted at the induced heat. The last two heifers were "missed" for two consecutive heats and then artificially inseminated with excellent semen, with a view to simulating a method of treatment for such diseases as trichomoniasis and vibriosis, which has been recommended after trial in the field by a number of authors (including Wright some years ago, and Rowson more recently). Both the last two groups continued to return, and appear as controls in Table I, Section ii. Eventually they were treated with progesterone, and four out of seven conceived, as shown in Table II.

Herd 2A

Included 12 Jersey heifers, which had been served continuously from April, 1951, to January, 1952, about 13 times each. Two bulls were used by natural service, whilst A.I. was adopted with three other bulls. A mineral supplement had been fed, satisfactory in the light of current knowledge for calcium-phosphorus ratio and trace elements. All the animals had been dosed with wheat germ oil during the autumn of 1951; mucus agglutination tests for vibriosis and trichomoniasis were negative. Ample old pasture was again available. At the outset six were missed once, and six twice, and all were checked as empty. Service was then resumed with one of the previous bulls, eight heifers being implanted and four left as controls, with results as shown in Table I, Sections i and ii. When further services had failed in the control group, these animals were in their turn implanted, with results as shown in Table II.

Herd 2B

The next year's crop of heifers on the last-mentioned farm were served fruitlessly, by a different, tested, bull, from April to late June, 1952. Fourteen were then checked as empty, and implanted after the first subsequent service; to this service six returned, and were served again, after which they received a 200 mg. implant. All these results appear in Table II.

Herd 3

This herd involved 16 Friesian cow-heifers which had calved at an average age of only 22 months and had since been served an average of five times each, some at noticeably irregular intervals. Again there were negative tests for vibriosis and trichomoniasis, and also clinical evidence of a tendency to failure of the luteinising function. The bull was not tested, but was satisfactory on the older cows. Pasture included much short-duration ley heavily dressed with phosphatic artificial manures; mineral feeding was of a haphazard nature.

In the treated group of nine animals :—

Three held and carried to term, at the first service after implant.

Four held and carried to term, at the second service after implant.

Table I

Results on Treated Animals, with the Corresponding Untreated Controls

Section i : Treated Cases

	Number	Held to first service	Held to second service	Failed
Herd 1	5	1	3	1
„ 2A	8	5	1	2
„ 3	9	3	4	2
	22	9	8	5
		17		

The cases of the two failures tabulated for Herd 3 are discussed above; it is considered that there was a partial effect by the implant each time.

*Section ii : Control Cases**

	Number	Held to first service	Held to second service	Returning 3 times more (5 returns in all)
Herd 1	7	—	—	7
„ 2A	4	—	—	4
„ 3	7	2 or 3		5 or 4 (6 returns each)
	18	2 or 3		15 or 16

The "doubtful" third animal that conceived in Herd 3 is the one that was implanted at eight weeks to save what was believed to be a gravely endangered pregnancy.

* Includes only returns to service *following* treatment of Section i animals.

Table II

Results on Other Treated Animals, Including Former Controls

	Number	Held to first service	Held to second service	Failed
Herd 2A	4	3	—	1 } All from these herds
„ 1	7	2	2 } double dose after second service	3 } were former controls
„ 2B	14	8	4 }	2, but one held to 4th service
	25	13	6	6
		19		

Table III

Total of Results on Treated Animals

Number	Held to first service	Held to second service	Failed
47	22	14	11
	36		

One had two services 30 days apart, went 20 days and was served, 23 days and was served again, went 31 days (being examined at the 26th and evidence of pregnancy obtained), served again and implanted, went 36 days, served again and went 19 days and returned.

One had two services 29 days apart, was implanted after the second and went 49 days, then returned, and was served three times more at 19, 18 and 21 days.

The histories of these last two animals are, tentatively, interpreted as exhibiting early foetal death initially, and following implantation, a partial effect by the hormone, prolonging gestation to about 36 and 49 days, as compared with at longest 29 and 31 days before treatment.

Of the control group of seven animals :—

Four continued to give trouble right through to the end of May or beginning of June. They received an average of about six more services, three or four of these after the bulk of the treated group had finally settled.

One had only three services from start to finish, going 42 and 76 days, settling finally to a service just one month later than the " mean settling date " of the treated group.

One held to third service after going 55 and 76 days, settling earlier in the year than the mean of the treated group.

One held to third service after 21 and 20 days ; was examined when eight weeks pregnant, and from the tone of the uterus and condition of the cervix was thought to be in imminent danger of losing the foetus ; she was immediately implanted, made a clinical recovery, and carried to full term.

Discussion

The time of progesterone administration chosen was intended to coincide with the normal time of maturation of the healthy luteal organ. The apparent good results obtained at the second service after treatment were unexpected, considering the known effect of oestrogen-progesterone imbalance in various laboratory animals (though admittedly not the rat) around ovulation time. This is, that when progesterone is present in non-physiological proportion to oestrogen, the hormones are antagonistic, and the normal tendency of the oestrogen to produce endometrial hyperplasia is neutralised. Further, inadequate oestrogen priming prevents evocation of a progestational response from the endometrium by even the largest doses of progesterone (Corner & Allen). Hansel & Trimberger have shown, for the cow, that progesterone at the beginning of heat hastens ovulation.

That conceptions were obtained to the second service may indicate that an ovulation-time factor plays some part in the functional disorder encountered, besides the implantation-failure factor, which was certainly present in Herd 3. It is not contended that prior to progesterone treatment the mineral nutrition had been rendered satisfactory in any herd during or after the course of the infertility. The effect of " spring grass," however, may probably be ruled out, as conceptions following implantation began in February, sometimes while snow lay.

Summary

Forty-seven heifers or cow-heifers with prolonged histories of infertility were treated with 100 mg. progesterone by implantation, and thereafter 36 held to first or second service. Of 18 kept as untreated controls from the same herds, 15 failed to hold to at least five services each while the treated animals were settling.

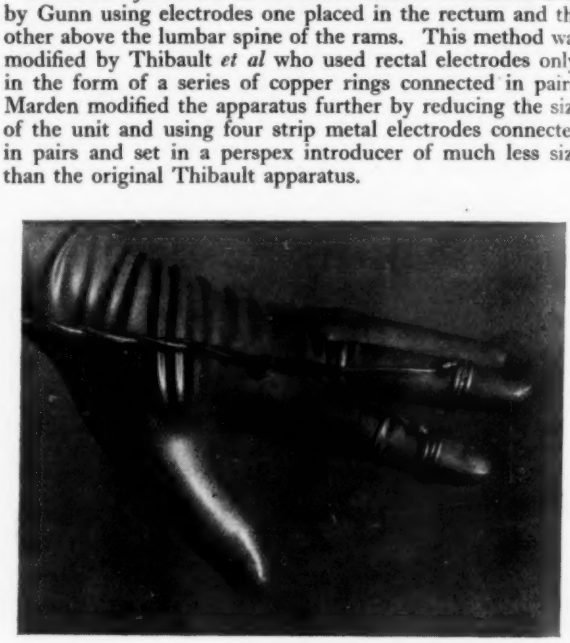
Acknowledgment.—I wish to express my appreciation of the co-operation extended by the practising veterinary surgeons in each of the herds concerned.

CLINICAL COMMUNICATION

ELECTRICAL EJACULATION IN THE BULL

L. E. ROWSON AND M. I. MURDOCH

Electrical ejaculation in domestic animals was introduced by Gunn using electrodes one placed in the rectum and the other above the lumbar spine of the rams. This method was modified by Thibault *et al* who used rectal electrodes only, in the form of a series of copper rings connected in pairs. Marden modified the apparatus further by reducing the size of the unit and using four strip metal electrodes connected in pairs and set in a perspex introducer of much less size than the original Thibault apparatus.



Showing the method of holding electrodes.

While using a modification of the Thibault apparatus designed and constructed by Dr. Walton, of Cambridge, for the ram, it was noticed that when used on the bull the degree of sexual stimulation could be influenced by the angle of the electrode in the rectum. It was obvious that the greatest effect was taking place when the electrode was in close contact with the seminal vesicle and ampullae.

Electrodes in the form of small copper rings were therefore constructed, worn on the fingers of a rubber-gloved hand, and held on either side of the ampullae by inserting the hand into the rectum of the bull. Stimulation applied through such electrodes was remarkably successful in effect, while producing very little general reaction of the animal. As with the Thibault apparatus urethral and seminal fluid was

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produced first, and was followed by semen. This was usually of good quality and of considerable volume.

The stimulation was effected by using a small transformer converting the mains voltage to 24, while a rheostat controlled the current which was passed to the electrodes. The application of the electrical stimulus was in the form described by Thibault, *i.e.*, in increasing sine wave pulses of stimulation, though maximum voltage was never required. Systemic reaction was almost nil, and no additional restraint was found to be necessary.

The seminal fluid and sperm was collected by using a warmed funnel and test tube. Eighty-six first inseminations carried out with semen obtained in this way gave a 70 per cent., 90- to 120-day conception rate.

The value of this simple and extremely cheap apparatus should be considerable where semen is required from aged or lame bulls, or from animals which refuse to serve into the artificial vagina. It is being used routinely on certain bulls at the Cambridge A.I. Centre.

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ABSTRACTS

Liver Fluke Infection*

The authors refer to the literature on the diagnosis of liver fluke infection and describe a new method of detecting fluke eggs, for which they claim that it shortens the time required, improves the accuracy of the egg-count, requires less equipment than other methods do and is suitable for field diagnosis. The method uses a detergent to free the eggs from faecal matter and colloidal material and tincture of iodine is used to colour the eggs reddish-brown. The eggs are finally counted as they lie on the bottom of a dish, a stereoscopic or ordinary microscope being used.

The successive steps of the method are:

1. Collect 300–500 grammes of faeces from the rectum and mix thoroughly; if very dry add a little water to make the consistency into a workable mixture.

2. Take one gramme of this and mix well with 15 c.c. of the detergent in a large test tube, taking care not to cause the formation of too much foam. The authors found that, of the 25 varieties tried, the liquid detergents called "Joy" and "Glim", both manufactured in Chicago, were the most suitable. The solution consisted of five c.c. detergent added to 995 c.c. tap water to which were added eight drops of a one per cent. solution of alum.

3. Strain the mixture through an 80-mesh screen in a funnel into a 50 c.c. centrifuge tube, rinsing the first tube used with detergent to collect any eggs left in it. Pour detergent through the faecal material on the screen in the funnel with a "flooding, swirling" motion till the 50 c.c. tube is full.

4. Allow to stand in the 50 c.c. tube for not less than five minutes and not more than 15 minutes. If the mixture is left longer, too much debris collects at the bottom of the tube.

5. Siphon off three-quarters of the supernatant fluid and wash more detergent through the screen to fill the 50 c.c. tube again. Allow to stand for five to 15 minutes as before and then siphon off all but 2 to 3 c.c. of the supernatant fluid, without disturbing the deposit.

6. Add 1 to 3 drops of tincture of iodine to the deposit and leave for two to five minutes.

7. Transfer the deposit to a reading dish, the bottom of which can be scribed with lines quarter inch apart to facilitate counting the eggs. Rinse out with tap water the 50 c.c. tube into the dish to make 15 to 20 c.c. of fluid in the dish. Count the reddish-brown eggs lying on the bottom of the dish, using a stereoscopic microscope at a magnification of $\times 18$ or higher.

For field diagnosis the same method is used, except that the supernatant fluid is taken off with a bulb syringe or by decanting, without disturbing the deposit, and portions of the deposit are then counted successively on slides under an ordinary microscope at a magnification of $\times 50$. All the deposit must thus be counted. Most of the eggs are found in in the deposit. The number of eggs counted in the dish is the number of eggs per gramme of faeces. A number of samples may be processed simultaneously.

G. L.

* * * * *

Studies on *Trypanosoma Vivax**

Trypanosoma vivax infections of cattle are usually considered to cause a mild disease in East Africa although there are some reports of acute fatal cases. *T. congolense*, on the other hand, is generally considered the most important East African animal trypanosome. In West Africa the position appears to be different. There, *T. vivax* is the predominant species and the strains generally are virulent and fatal for cattle although the humpless breed seems to possess a relatively high degree of tolerance to infection. Because of the difference in the clinical picture between East and West African infections the author decided to re-examine the morphology of *T. vivax*. Two strains of *T. vivax* in Nigeria were transmitted through sheep by cyclically infected *Glossina palpalis*, the parasites being measured over a period of several months. The mean lengths of one strain (Ilorin) varied from 21·36μ to 24·04μ, while those of the other strain (Maidontoro) fell within the limits of the first strain. A third strain (Lumu), obtained from collected wild *G. morsitans* which were fed on sheep, had a mean length of from 22·59μ to 24·58μ and thus indicated that the species of tsetse fly had no influence on the length of the parasite. Two tables give the length distribution and mean length (a) of other strains of *T. vivax* from East and West Africa in various animals and (b) of further strains from Africa, Panama and Mauritius in various animals as recorded in the literature. From the data obtained it was found that the mammalian host has an influence on the length of *T. vivax* and that the length distribution and mean lengths of the parasite fall into two groups, a West and an East African, the former being shorter than those of the usual chronic East African strains. This morphological difference also appears to be associated with differences in the clinical symptoms and lesions seen *post-mortem*. Acute, virulent strains of *T. vivax* occur in East Africa and the mean length of one of these fell within the range of the Nigerian strains. From a consideration of the results of his investigation the author suggests that there are two types, or subspecies, of *T. vivax* and that their existence may explain the differing veterinary importance of infections reported from East and West Africa. The relationship of *T. caprae* to *T. vivax* is also discussed.

J. N. O.

* **A New Laboratory and Field Diagnostic for Fluke Ova in Faeces.** DENNIS, W. *et al.* (1954). *J. Amer. vet. med. Ass.* **124.** 47-50.

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PRESIDENT OF THE R.C.V.S.

At a meeting of the Council of the Royal College of Veterinary Surgeons, following the Annual General Meeting, and held on Tuesday last at Red Lion Square, Dr. W. R. Wooldridge was unanimously elected President for the forthcoming year. He had been junior vice-President for the year 1953–54, and now succeeds Professor Glover. He has been a member of the Council since 1939. By achieving the highest honour the Profession has to bestow, Dr. Wooldridge sets the seal upon a remarkable career in which scholarship, academic interests, and public affairs have been equally combined.

Walter Reginald Wooldridge was born in 1900. He was educated at Sir Walter St. John's School, the Royal Veterinary College, Birkbeck College, London, and Caius College, Cambridge. He took first an honours B.Sc. in chemistry, and then, interesting himself in veterinary surgery through the advice of his uncle, Professor George Wooldridge—himself a past President of the Royal College—he studied for the M.R.C.V.S. diploma which he took in 1924, being Centenary Medallist of that year. For a few months after graduating he went into private practice in Reading; but research work, to which he has since devoted much of his life, attracted him back to academic circles. He was the Frank Smart student at Caius in 1926, and was awarded a Beit Memorial Fellowship for Medical Research in the following year. He took his M.Sc. (London) in 1927 followed by the Ph.D. (Cantab.) Biochemistry in 1928. His own researches, which were of a high calibre, have been mainly concerned with fundamental problems of enzyme in bacterial chemistry.

While at Cambridge he first accepted a post on the research staff of the Food Investigation Board at the Low Temperature Research Station, under the late Sir William Hardy, F.R.S., and later moved to the Sir William Dunn Institute of Biochemistry under the late Sir William Gowland Hopkins, O.M., F.R.S. The year 1929 saw his appointment to the Staff of the London School of Hygiene and Tropical Medicine where he was first Demonstrator, and soon afterwards Lecturer in the Division of Biochemistry, a post he retained until 1946.

During these busy years Dr. Wooldridge found time from his academic and research work to serve the Profession in a number of offices. In 1931 he became President of the Veterinary Research Club and afterwards Hon. Secretary for several years. In the same year he was elected to the Council of the B.V.A.—or the N.V.M.A. as it was then. In the Association's service he was successively Chairman of the Editorial Committee (1936–38), Hon. Secretary (1938–41), and President (1941–43). Since that time he has continued to take a close interest in all the Association's affairs, serving on Committees—notably the Parliamentary and Public Relations Committee of which he has been Chairman for several years—and being included in innumerable *ad hoc* bodies and delegations. In 1949 he was appointed Hon. Secretary of the 14th International Veterinary Congress in London.

His accession to one office after another within the Profession was accompanied by steadily increasing responsibilities connected with London University. In 1934 he was elected a Governor of Birkbeck College, and since 1934 he has been Vice-Chairman and Chairman of its Finance and General Purposes Committee. In 1938 he was elected a Governor of the London School of Hygiene and Tropical Medicine; in 1943 he became a Governor and Member of Council of the Royal Veterinary College, Chairman of the Policy Committee of the Birkbeck College Governors, and University representative on the Board of Wye Agricultural College. In May, 1952, he was elected to the Senate of the University in the Faculty of Science. Dr. Wooldridge was active in promoting the Parliamentary and Scientific Committee and has been a representative of the Profession on this body since its inception. He is at present a vice-President and has been Secretary on several occasions. He has been active also in the work of the British Council.

During the war years Dr. Wooldridge was Director of Veterinary Services for the National A.R.P. Animals Committee, and, from 1942, Executive Officer for the Farm Livestock Emergency Service in England and Wales. It will be recalled that the contamination of animals by poisonous gas, and direct attacks upon farm stock, were both dangers against which elaborate precautions had to be taken and maintained. During the course of his duties he was in constant association with government and municipal officials, agricultural organisations, and the Animal Welfare Societies. His insistence upon the Profession's just rights, and its prestige, during exceptional times are not the least among the services he has rendered. In addition to his heavy duties during the day, he was evening lecturer to the L.C.C. at Smithfield, on food contamination with war gases, the principles of feeding, etc. He continued his association with technical education after the war, and now is a Governor of the National College of Food Technology.

Dr. Wooldridge has always been in the forefront of movements—indeed he was the pioneer of many—intended to enhance the prestige of the Profession in the eyes of the community. It has been said of him that few men have done more in this connection, and that the position now enjoyed by veterinary science in government and other circles owes much to his imagination, pertinacity and vigour. He is a shrewd and skilful negotiator, a diplomatic and well-informed colleague, and has never abated his high personal ideal of what the veterinary profession can and should be. His two addresses as President of the British Veterinary Association, "A National Animal Health Service," and "The Veterinary Profession and the Nation," attracted wide notice even in wartime, and showed the sweep of his mind, and his capacity to evaluate broad issues among a mass of detail.

Over a long period of years he has been closely interested in veterinary education. In 1937–39, and again in 1943–44 he was a member of the Inter-departmental Committee on Veterinary Education in Great Britain, whose findings led to the publication of the Loveday Reports and paved the way for the Veterinary Surgeons Act of 1948. Since 1949 he has been a member of the Permanent International Veterinary Committee. It was through his interest in the general and higher education of veterinarians that he envisaged, in 1942, the Veterinary Educational Trust, later the Animal Health Trust, with which his name will always be associated. Having secured the interest of the Duke of Norfolk and of other prominent persons, a fund was launched for the provision of scholarships for recommended students, and of research fellowships for graduates. Since the inception of the Trust 176 awards have been made to a value of approximately £60,000. Letters which have appeared in *The Veterinary Record* sufficiently attest the value placed on these awards by the recipients, many of whom have gone on to senior research posts in universities and other laboratories and institutes all over the world. The original idea behind the Veterinary Educational Trust has been expanded considerably, and under the name of the Animal Health Trust the organisation now has its own research stations for poultry, farm livestock, horses, and dogs. The original educational aim, however, is still continued as a fundamental part of the whole project, and a fresh list of awards will shortly be announced.

(*Continued at foot of col.* 1, *page* 329)

DR. W. R. WOOLDRIDGE, M.SC., F.R.I.C., M.R.C.V.S.

The new President of the Royal College of Veterinary Surgeons.

ATROPHIC RHINITIS ORDER

The Minister of Agriculture has made an Order covering possible outbreaks of this disease which, as briefly reported in our last issue, has appeared for the first time in this country For the information of readers we quote the Order in full. It is as follows :—

Citation

This Order may be cited as the Atrophic Rhinitis Order, 1954.

Interpretation

(1) In this Order, unless the context otherwise requires :—

" local authority " means a local authority for the purposes of the Diseases of Animals Act, 1950 ;

" The Minister " and " The Ministry " mean respectively the Minister and the Ministry of Agriculture and Fisheries ;

" veterinary inspector " means a veterinary inspector appointed by the Minister.

(2) The Interpretation Act, 1889, shall apply to the interpretation of this Order as it applies to the interpretation of an Act of Parliament.

Extension of Definition of " Disease "

(1) For the purposes of the Diseases of Animals Act, 1950, the definition of the expression " disease " contained in paragraph (*a*) of subsection (3) of section 84 of the Diseases of Animals Act, 1950, is hereby extended so as to include the disease known as atrophic rhinitis, and that disease shall also be a disease to which section 17 of the aforesaid Act applies.

(2) In the Animals (Miscellaneous Provisions) Order of 1927 as amended by the Animals (Miscellaneous Provisions) Order of 1938 the expression " disease " shall include the disease known as atrophic rhinitis and that Order shall be read and have effect accordingly.

Detention and Isolation of Swine and Precautions to be Adopted to Prevent the Spread of Infection

(1) A veterinary inspector may by notice served on the owner or person in charge of any swine which are affected with the disease known as atrophic rhinitis or which he suspects to be so affected or to have been in any way exposed to the infection of that disease, require the owner or person in charge to detain the swine on the premises specified in the notice and to keep the swine isolated, as far as practicable, from other swine and with a view to preventing the spread of infection to adopt such other precautions as may be specified in the notice.

(2) A veterinary inspector may, by subsequent notice in writing to the owner or person in charge of the swine direct that :—

(*a*) such additional precautions as may be specified in such subsequent notice shall be adopted ; or

(*b*) any requirement specified in any notice served under this Article shall cease to apply or shall be modified to the extent or in the manner specified in such subsequent notice.

(3) A copy of any notice served by a veterinary inspector under this Article shall, with all practicable speed, be sent by him to the local authority.

No swine shall be permitted to enter any premises in respect of which a notice served under Article 4 of this Order is still in force except with a licence granted by a veterinary inspector and in accordance with such conditions as may be specified therein.

Cleansing and Disinfection

(1) The occupier of any premises on which there are or have been any swine in respect of which any notice under Article 4 of this Order has been served shall if so required by notice in writing served by a veterinary inspector cleanse and disinfect in accordance with the provisions of the notice any premises in which the swine have been placed or kept, and any utensil, appliance or other thing used for or about the swine. A copy of any such notice served by a veterinary inspector shall with all practicable speed be sent by him to the local authority.

(2) A notice served under this Article may provide that the cleansing and disinfection shall be at the expense of the Minister, or at the expense of the occupier.

(3) If the occupier of any premises fails to cleanse and disinfect the premises, or any utensil, appliance or other thing, when required under this Article, it shall be lawful for the Minister without prejudice to the recovery of any penalty for the infringement of this Article to cause such premises or utensil, appliance or other thing to be cleansed and disinfected, and in any case in which a notice provides that cleansing and disinfection shall be at the expense of the occupier to recover summarily as a civil debt the expenses of such cleansing and disinfection from the occupier.

Local Authority to Enforce Order

The provisions of this Order, except where it is otherwise provided, shall be executed and enforced by the local authority.

* * * * *

A second Order lays down the compensation payable to owners of slaughtered animals. It reads :—

Where the Minister of Agriculture and Fisheries has, in exercise of his powers under Section 17 of the Diseases of Animals Act, 1950, as applied to the disease known as Atrophic Rhinitis by the Atrophic Rhinitis Order, 1954, caused to be slaughtered any swine affected or suspected of being affected with that disease, or which has been exposed to the infection of that disease, the compensation payable by him for any animal slaughtered under that section as so applied shall be :—

(*a*) where the animal slaughtered was affected with atrophic rhinitis, one half of the value of the animal immediately before it became so affected ;

(*b*) in every other case, the value of the animal immediately before it was slaughtered.

Owing to his long and wide connection with educational affairs, and with most movements to advance the status of the Profession, Dr. Wooldridge is known to the majority of veterinarians. His vitality, his geniality, his personal generosity and warmth of character need no describing. He succeeds in combining the qualities of scholar and man of affairs in an uncommon degree. In a year when negotiations of importance to almost every member of the Profession are likely to come to a head, his colleagues on the Council of the Royal College have chosen a young and vigorous leader of proved capacity. He follows a most distinguished President in Professor Glover, whose advice and assistance as senior Vice-President he will continue to enjoy. Every veterinary surgeon will wish him well.

B.V.A. 72nd ANNUAL CONGRESS

Torquay, September 19th to 25th, 1954

LIST OF HOTELS

We publish below a list of the principal hotels in Torquay. The Congress centre, where the Annual Banquet and certain other Social Functions will be held, will be the Palace. In making their reservations members are advised to mention that they are visiting Torquay for the purpose of attending the Congress. Should none of the hotels listed below be suitable for members' requirements or should they have no accommodation left, a further list is available from the Torquay Hotels Association, 9, Vaughan Parade (Telephone 3367).

Name and address	Telephone	Rooms		Garage	Daily Terms
		Double	Single		
Abbey Lawn, Belgrave Crescent	2791	49	11	Car Park	25/6 to 32/6
Argyll Hall, Warren Road	4614	26	6	Yes	30/–
Carlton, Daddyhole Plain	7633	32	26	30 cars	30/– B. & B. 21/6
Conway Court, Warren Road	2088	26	8	Yes	42/–
Devonshire, Park Hill Road	4850	53	9	Lock-ups	21/–
Foxlands, Babbacombe	88072	31	12	20 cars	30/–
Grand, Torbay Road	2234	80	60	75 cars	42/– to 48/–
Imperial, Torquay	4301	60	60	50 cars	45/– to 65/– B. & B. 30/– to 45/–
Links, St. Marychurch	87211	16	19	Yes	35/–
Livermead House, Sea Front	4361	45	25	Yes	27/6 B. & B. 19/6
Osborne, Meadfoot Beach	2232	55	42	50 cars	36/– to 45/–
Oswald's, Babbacombe	88420	41	9	Yes	From 25/–
Palace, Torquay	2271	90	54	100 cars	41/– to 60/–
Palermo, Babbacombe	88442	24	3	Ample parking	27/6
Palm Court, Sea Front	4881	62	32	Near	From 25/–
Phyllis Court, Torbay Road	443311	30	9	Lock-ups and Parking	26/– to 42/–
Princes, Park Hill Road	2816	41	14	Yes	21/– to 36/–
Queens, Victoria Parade	4324	39	14	100 cars nearby	33/– to 39/–
Hotel Regina, Victoria Parade	2904	50	25	Yes	35/– to 42/–
Rising Sun, Belgrave Road	372011	3	1	Yes	21/–
Hotel Riviera, Park Hill Road	7174	38	12	Yes (9)	30/– to 42/–
Rosetor, Chestnut Avenue	4391	40	39	Yes	42/–
San Remo, Belgrave Road	3760	25	13	Parking	30/– to 39/–
Torbay, Torbay Road	2218	51	45	Yes	35/– to 45/– + 10% gratuities
Trecarn, Palermo Road, Babbacombe ...	870881	49	31	Yes	From 27/6
Victoria, Belgrave Road	7501	60	24	Adjacent	33/– to 50/–
All the above are licensed					
Ashley Court, Abbey Road	241711	21	5	Yes	15/– to 25/–
Anstey's Manor, Asheldon Road	3679	25	9	Parking	22/6 to 35/–
Babbacombe Bay, Downs Road	888711	20	7	Nearby	21/– to 27/6
Cavendish, Belgrave Road	3682	35	15	Parking	24/– to 30/–
Chelston Hall, Old Mill Road	65520	21	7	Parking	21/– to 30/–
Chillingworth, Belgrave Road	218511	36	8	Parking Free	27/– to 35/–
Collingwood, Braddons Hill Road E. ...	344811	23	2	Yes	18/– to 25/–
Cumberland, Braddons Hill Road	2379	30	10	Yes	21/– to 27/6
Derwent, Belgrave Road	3452	21	5	Yes	18/– to 27/6
Dorchester, Daddy Hole Plain	4155	57	3	Lock-ups	As Brochures, Less 20%
Elmington, St. Agnes Lane	65192	26	16	Yes and Parking	18/– to 30/–
Hazelwood, Belgrave Road	241411	21	4	Nearby	18/– to 25/–
Heywood Tower, Hr. Warberry Road ...	3837	30	10	—	From 30/–
Hove Mansions, Furze Hill Road	2307	26	4	Parking	21/– to 25/–
Kistor, Belgrave Road	3219	21	8	Adjoining	25/– to 35/–
Rock Walk, Torquay	208711	25	4	Adjacent	30/–
Roselea, Chestnut Avenue	3001	12	14	Yes	36/–
Roslin Hall, Belgrave Road	4373	36	14	Yes	30/– to 33/–
Sefton, Babbacombe	88400	40	8	Lock-ups	30/–
South Devon, Babbacombe	88742	22	6	Free Parking	18/6 to 25/6
Templestowe, Tor Church Road	4911	40	5	Parking	24/– to 30/–
Toorak, Chestnut Avenue	7135	60	40	Yes	From 24/–
Tourine, Tor Church Road	3394	30	7	Free Parking	From 18/–
Vernon Court, Warren Road	2676	35	15	Parking	27/– to 33/–
Villa Como, St. Lukes Road S.	3071	23	3	Yes and Parking	26/6
Wellswood Hall, Wellswood Avenue ...	3746	17	14	Lock-ups and Parking	21/–

REVIEW

[**The Mating and Whelping of Dogs.** By Captain R. Portman-Graham, L.D.S., R.C.S. Popular Dogs Publishing Co. Ltd., price 7s. 6d.]

It may surprise many people that it is possible to devote 70 pages to a discussion of a single natural function, that of coitus in the dog. However, none of the information in this book is superfluous and if it is remembered that the method of coition in the dog is distinctly complex compared with most domesticated animals and that under conditions of selection by breeders, as opposed to natural selection and courtship, involving the use of valuable stud animals, it will be realised that a book such as this has long been overdue and we believe that not only will it prove of great use to novice breeders but to some breeders who after years of experience remain singularly inept in the management of stud dogs. Veterinary students who have not had personal experience of stud work in kennels will find this volume most helpful when faced by distraught dog or bitch owners who so frequently send out S.O.S. messages for assistance after hours of futile work with notable lack of success.

The author has avoided the pitfall which has rendered so many books of this type less valuable, *i.e.*, a failure to discuss detail. As he rightly says this may be due to false modesty in most cases, but this book has dealt with the subject fairly and squarely and has faced up to all the necessary facts. It is a pity that in discussing the anatomy of the parts concerned the author has not mentioned the vitally important band of voluntary muscle in the vagina of the bitch which plays such a big part in acceptance of the dog by the bitch, ease of penetration by the dog and, finally, in the tie. Far too many breeders attribute the tie to the dog only, whereas in fact the bitch has an important rôle via this anatomical feature; all too often in frigid bitches this unrelaxed muscle is described as a stricture. There is considerably greater variation in the duration of pro-oestrus and oestrus, and far greater difficulty in determining the time of ovulation than the author would have us believe ; for this reason we regret his adherence to the customary practice of arbitrary choice of the dog for mating and the belief that the single service is sufficient. There is probably no greater single cause of infertility in the bitch than this rule of thumb method of deciding when a bitch is " ready " and adoption of the single service technique.

The remaining section of the book, some 60 pages, is devoted to whelping. This section is again of high standard and should prove most helpful to many breeders. It will indirectly be helpful to many veterinary surgeons, by obviating some of the " panic " calls with which we are all so familiar. The illustrations are excellent but we would like to know how, in Fig. 2, the whelp still enclosed in foetal membranes and with placenta neatly attached, has managed to propel itself so far from its point of arrival !

Throughout the book the author constantly stresses the need for co-operation with the veterinary surgeon and the measures he advocates breeders adopting in case of emergency will surely meet with the approval of all. Maybe we do not all agree with the routine use of ecbolics after whelping, but the advice to have the bitch examined as a routine is sound. The author describes the posterior presentation as a breech and apparently regards it as not normal ; the frequency with which this presentation occurs surely must indicate normality, but the advice given for assistance during slow delivery of such a presentation is excellent.

In conclusion, we would most heartily recommend this book to dog breeders, particularly beginners, and also to veterinary students as a prelude to this clinical obstetrical teaching. It is written in a pleasing style (except for the curious affectation of always writing Kennel !) and is a most valuable addition to the literature of the dog fancy.

QUESTIONS IN PARLIAMENT

Bloat in Dairy Cows

Mr. Hurd (May 20th) asked the Minister of Agriculture, in view of the recent losses by bloat among dairy cows grazing on ley pastures, if he will ask the Agricultural Research Council to give special attention to this problem and make a report.

Mr. Nugent: The Agricultural Research Council has already arranged to intensify research on bloat in collaboration with the veterinary and advisory services of my Department. My right hon. Friend will consider with the Council the question of a report.

Myxomatosis

Mr. Hurd (May 20th) asked the Minister of Agriculture the present extent of the spread of myxomatosis among rabbits; whether the disease is proving equally virulent and fatal in all the districts affected; and what steps are being taken to make a thorough clearance of surviving rabbits.

Sir T. Dugdale: There are now areas of infection, some covering many square miles, in Kent, East Sussex, Essex and East Suffolk, and the disease has spread into Norfolk. Isolated outbreaks have been confirmed in the Isle of Wight and, in the last 10 days, in Radnorshire, Gloucestershire, Cornwall and Bedfordshire. It would be early to expect the development of an epidemic such as occurred in France last year, and the disease appears to be causing a varying mortality among rabbits in the affected areas.

I am advised that the best time for killing off surviving rabbits will be in the autumn and winter when herbage has died down and the disease has abated. Discussions have taken place with representatives of farmers and owners, farm workers and forestry and other interests, and instructions will shortly be sent to county agricultural executive committees on the planning of these follow-up operations.

Trichinosis Outbreak, Liverpool

Mrs. Braddock (May 26th) asked the Minister of Food if he is aware that, in the outbreak of trichinosis in Liverpool recently, it was found to be impossible to trace the infected pig beyond the abattoir; and, in view of the serious infection which can be caused, what steps he is taking to have complete records of the movement of pigs available to medical officers of health responsible for tracing infections.

Dr. Hill: The movement of pigs is subject to the provisions of the Movement of Animals (Records) Order, 1925, which requires records of movements to be kept in a prescribed form; this Order is enforced by the local authorities responsible under the Diseases of Animals Act, 1950, and the records should be available to medical officers and others when tracing infections.

Mrs. Braddock: Is the Parliamentary Secretary aware that there was a very serious outbreak of trichinosis in Liverpool, that the whole of the health services were at work, and that the actual pig infected was traced? Is he also aware that, in view of the fact that records evidently were not kept up to date, it was impossible to find out from which farm the pig came, that it may be that particular farm is still infected and that there is still infected pork coming from that farm? Will the hon. Gentleman see that the situation is cleared up as quickly as possible, in view of the fact that 11 per cent. of the population are bound to suffer from this disease at some time or another?

Dr. Hill: I share the hon. Lady's concern at the outbreak in Liverpool. In only two of the 89 cases was the infection traced to pork, and, in those cases, it seems that difficulty was found

in tracing the infected pig to the piggery. I am looking into these cases. In the remaining cases, as the hon. Lady will appreciate, the infection came from sausages, and it is extremely difficult in a large sausage factory to trace a carcase.

Mr. BALDWIN: Is my hon. Friend aware that the Movement of Animals Order is very effective in that it enables records to be kept of all animals from farm to farm and to the abattoir, but that it is impracticable to trace a carcase from the abattoir to the consumer?

Dr. HILL: The Order permits, in the case of pigs going for pork, the tracing of the carcase to the piggery, and that is the position which the hon. Lady has in mind.

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LANDRACE PIGS

Major ANSTRUTHER-GRAY (May 27th) asked the Minister of Agriculture if he will make a statement about the recent outbreak of a disease among imported Landrace pigs.

Sir T. DUGDALE: Atrophic rhinitis has been confirmed amongst pigs bred from a Landrace sow imported from Sweden. This disease is transmissible by contact and, if unchecked, would have serious consequences upon efficient and economic pig production. I have therefore made Orders providing for the isolation, detention and, where necessary, slaughter of affected pigs and those in contact with them. Compensation will be payable for all pigs so slaughtered. I have also decided that for the time being no further Landrace pigs should be imported from Sweden. I regret that this step should be necessary, particularly as an importation to which I had previously agreed for Scotland comes under the ban.

This disease has, I understand, led to the slaughter of several leading herds in Sweden and it has caused serious losses in other countries. I am satisfied that we ought to do everything possible to stamp it out quickly before it can get a hold in this country.

Major ANSTRUTHER-GRAY: May the House take it that there is no doubt whatever that this disease originated in the Swedish imported pigs?

Sir T. DUGDALE: I think there is no doubt at all. The House may be interested to know that the pig that was affected was a boar, one of a litter of three out of a dam imported from Sweden.

Mr. T. WILLIAMS: Before the importation of the Swedish Landrace pigs, did any of our veterinary officers go over to Sweden and contact Swedish veterinary officers to ask them whether there was a clean bill of health or not?

Sir T. DUGDALE: Yes, they did, most definitely. There is no question that the greatest possible trouble was taken. There was a quarantine in Sweden and over here, but the technical difficulty is that we cannot find out whether an animal has the disease before it actually develops it.

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VETERINARY MALLAMS, NIGERIA (ANONYMOUS COMMUNICATION)

Mr. J. JOHNSON (May 27th) asked the Secretary of State for the Colonies what communication he has had from the veterinary mallams of Nigeria about the newly formed Veterinary Association of Nigeria; and what action he is taking regarding their petition.

Mr. LYTTELTON: I received last month an anonymous communication purporting to come from some veterinary mallams in Nigeria. I sent this communication to the Governor and do not propose to take any further action on it.

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GIN TRAPS (PROHIBITION DATE)

Mr. DEEDES (May 27th) asked the Minister of Agriculture if he has considered representations made to him regarding the banning of the sale and use of gin traps in England and Wales; and if he will make a statement.

Sir T. DUGDALE: Yes. I would now propose, with the approval of the House, to fix July 31st, 1958, as the date after which the use in England and Wales of spring traps other than approved traps shall be prohibited. I am proposing this in the hope that by then supplies of suitable alternative traps will be available and in general use; and the Secretary of State for Scotland and I intend to set up a small committee to speed up and assist the improvement, testing and development of alternative traps and to advise generally on the approval of humane traps under the provisions of the Pests Bill.

In case these hopes are not realised I propose to take power to postpone, by order subject to affirmative Resolution of Parliament, the date on which the prohibition on the use of gin traps would otherwise come into effect. On practical grounds, it will be necessary to provide for such orders to be laid before Parliament not less than two years before that date.

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SLAUGHTER HORSES, IRELAND (EXAMINATION)

Mr. CHAPMAN (May 27th) asked the Minister of Agriculture if he will now announce regulations to govern the import of slaughter horses from Ireland.

Sir T. DUGDALE: After a careful study of this matter I have made an Order requiring such horses to be examined at the ports of arrival by my veterinary inspectors to ensure that the horses are still in a fit state after their voyage to continue their journey. The Order will come into operation on June 25th so as to give time for the necessary arrangements to be made at the ports.

(*See Note on page* 334.)

NOTES AND NEWS

Diary of Events

June 9th.—General Meeting of the Scottish Metropolitan Division, B.V.A., at the Minden Hotel, Peebles, 2.30 p.m.

June 9th.—Meeting of the Editorial Committee, B.V.A., at 7, Mansfield Street, London, W.1, 2.30 p.m.

June 10th.—President's invitation Luncheon and General Meeting of the Midland Counties Division, B.V.A., at the Penns Hall Hotel, Sutton Coldfield. Luncheon 1 p.m., Meeting 2.30 p.m.

June 10th.—Annual General Meeting of the Society of Practising Veterinary Surgeons, B.V.A., at the Grand Hotel, Manchester, 2 p.m.

June 11th.—Annual Dinner of the R.A.V.C. Officers Club at the Grosvenor House, Park Lane, London, W.1.

June 11th.—General Meeting of the South Wales Division, B.V.A., at the Cambrian Hotel, Saundersfoot, Pembs., 2.15 p.m.

June 16th.—Meeting of the North Wales Division, B.V.A., at the Glanaber Hotel, Bettws-y-Coed, 2 p.m.

June 16th.—Meeting of the Western Counties Division, B.V.A., at Torre Abbey, Torquay, 2.30 p.m.

June 17th.—Annual General Meeting of the North of Scotland Division, B.V.A., in the Northern Hotel, Aberdeen, 2.30 p.m.

June 17th.—Annual General Meeting of the South-East Midlands Division, B.V.A., at Franklins' Gardens Hotel, Northampton, 7 p.m.

June 17th.—Summer Meeting of the Herts and Beds Division, B.V.A., at Luton Hoo, 2.30 p.m.

June 19th.—Meeting of the Biochemical Society in the Department of Biochemistry, University of Cambridge, 11 a.m.

June 23rd.—Summer Meeting of the Royal Society of Medicine, Section of Comparative Medicine, at the Rothamsted Experimental Station, Harpenden, Herts, 10.45 a.m.

Sept. 19th—25th.—72nd Annual General Meeting and Congress of the British Veterinary Association at Torquay.

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JULY MEETINGS OF COUNCIL AND COMMITTEES, B.V.A.

Wednesday, July 21st, 1954:—

11.0 a.m. Organising Committee.
2.0 p.m. Home Appointments Committee.
3.30 p.m. Parliamentary and Public Relations Committee.

At 7, Mansfield Street, Portland Place, W.1.

Thursday, July 22nd, 1954:—

10.30 a.m. Veterinary State Medicine Committee.

1.45 p.m. Finance Sub-committee.

2.30 p.m. General Purposes and Finance Committee.

At 7, Mansfield Street, Portland Place, W.1.

Friday, July 23rd, 1954:—

10.30 a.m. Council Meeting.

At the Connaught Rooms, Great Queen Street, W.1.

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R.C.V.S. Examinations

Thursday, June 10th.—D.V.S.M. Written Examinations commence at Edinburgh.

Monday, June 14th.—D.V.S.M. Orals and Practicals commence.

Thursday, June 24th.—M.R.C.V.S. Written Examinations.

Friday, June 25th.—Ditto.

Monday, June 28th.—M.R.C.V.S. Practical and Orals commence (Panels "A" and "B").

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PERSONAL

Birth.—Carter.—On May 12th, 1954, at the General Hospital, Hereford, to Doreen (*née* Fowell), wife of Nigel Stansfield Carter, M.R.C.V.S., a daughter—Gillian Stansfield.

Hawksley.—On May 29th, 1954, at Battle Hospital, Reading, Berkshire, to Betty, wife of Michael Hawksley, B.Sc., M.R.C.V.S., a daughter—Jane Elizabeth Mary.

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R.C.V.S. OBITUARY

Powell, Harry Edwin, D.S.O., Stoneleigh, Coalville, Leicester. Graduated Edinburgh, December 22nd, 1893. Died May 23rd, 1954; aged 84 years.

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PROFESSOR J. B. BUXTON

As briefly recorded in our last issue, the funeral of the late Professor J. B. Buxton took place on Friday afternoon, May 28th, at Streatley Church. A very large gathering was present and included the following:—

Members of the Family.—Mrs. Buxton (widow), Dr. J. C. Buxton (son), Dr. A. Buxton (son), Mr. Frank Grant Buxton (brother), Mr. Eric Buxton (brother), Mrs. Baker (sister), Mr. David Grant Buxton (nephew), Mrs. J. C. Buxton (daughter-in-law).

Official Representatives.—Mr. and Mrs. H. Bell (representing the Royal Counties Veterinary Medical Association), Professor F. Blakemore (representing the University of Bristol Veterinary School), Sir Merrick R. Burrell (Vice-President, Royal Veterinary College, representing the Royal Agricultural Society of England), Sir Weldon Dalrymple-Champneys (representing the Minister of Health), Mr. H. W. Dawes, C.B.E. (Governor of the Royal Veterinary College), Dr. S. J. Edwards, Mr. H. W. Eley (representing Messrs. Baillière, Tindall & Cox Ltd.), Mr. C. W. Francis (Secretary of the Victoria Veterinary Benevolent Fund), Dr. W. Gordon (representing the Agricultural Research Council, Compton), Mr. A. M. Graham (representing the Chief Veterinary Officer, Mr. J. N. Ritchie, and the Animal Health Division of the Ministry of Agriculture and Fisheries), Mr. E. J. Heather (representing the Society of Practising Veterinary Surgeons), Dr. Henderson (Academic Registrar, University of London), Lieut.-Colonel J. Hickman (representing the Eastern Counties Veterinary Medical Association), Mr. S. L. Hignett (representing the Wellcome Research Station and the South-Eastern Veterinary Medical Association), Mr. J. McConnachie Ingram (representing the President and Officers of the British Veterinary Association, and the University of Glasgow Veterinary School), Sir Jocelyn Lucas, M.P. (Governor, Royal Veterinary College), Dr. A. McDiarmid (representing the Veterinary Research Club), Mr. and Mrs. G. P. Male, Professor A. Messervy, Dr. R. F. Montgomerie (representing the Wellcome Foundation), Mr. W. G. R. Oates (Registrar, Royal College of Veterinary Surgeons), Professor C. W. Ottaway (University of Bristol, representing the Association of Veterinary Teachers and Research Workers, and the B.R.X. Club), Professor L. P. Pugh (representing the Cambridge Veterinary School), Mr. J. R. Smallbone (representing Messrs. J. Smallbone & Sons Ltd.), Mr. J. Stroud (Renter Warden, Worshipful Company of Farriers, representing the Farriers' Lodge), Dr. E. L. Taylor (representing the Veterinary Laboratories, Weybridge), Sir Frank Ware (representing the Scientific Advisory Committee of the Animal Health Trust), Professor and Mrs. G. H. Wooldridge, Dr. W. R. Wooldridge (Scientific Director, Animal Health Trust, representing the Trust and the Royal College of Veterinary Surgeons), Professor J. G. Wright (Acting President of the Royal College of Veterinary Surgeons, representing the School of Veterinary Science, University of Liverpool), Professor H. Berry (Dean), Professor G. H. Buttle and Mr. D. A. Redston (representing the School of Pharmacy, University of London).

Members of the Staff of the Royal Veterinary College.—Mr. H. W. J. Adams (Secretary, Royal Veterinary College, representing Sir Charles Lovatt Evans, Chairman of the Council, and Major Christopher York, D.L., Hon. Treasurer), Professor and Mrs. Bosworth, Professor and Mrs. Burrow (representing the Royal Sanitary Institute), Professor and Mrs. Formston, Professor and Mrs. R. Lovell (representing *The British Veterinary Journal*), Professor N. J. Scorgie, Messrs. H. R. Allen, G. H. Arthur, Dr. F. R. Bell (representing the Central Veterinary Society and Professor E. C. Amoroso), Dr. and Mrs. E. G. C. Clarke, Messrs. E. Cotchin, R. F. S. Creed, P. W. Daykin, K. M. Dyce, W. B. Faull (representing Mr. P. W. Laing and Mrs. J. S. Wilkinson), Mr. and Mrs. J. C. Greatorex, Mr. M. B. Hawksley, Mr. and Mrs. J. W. H. Holmes, Messrs. P. L. Ingram, F. Jenner, G. C. Knight, A. M. Lawn, Mrs. E. F. Lewis (representing Mr. E. F. Lewis), Messrs. T. Lishman, R. H. Marchant, Ivor L. Martin, Dr. J. N. Oldham (representing the Royal Veterinary College Medical Association), Messrs. L. C. Vaughan and J. J. Yeats.

Mrs. K. M. Mitchell, Miss J. Y. Marshall and Miss M. Benton were present, and other members of the non-teaching staff included: Messrs. Hughes, Gooden, Taylor, Langford, Bailey, Lloyd, Hillhers, Williamson, Paul, Price, Pope, Winterton, Miss Boyle, Miss Bull, Mrs. Shepherd, Mrs. Newman, Mrs. Rumble, Mr. and Mrs. S. Woodage, Mr. R. Woodage, Mrs. Cook, Mr. and Mrs. Franklin

Others present included.—Mr. Stuart Whibley, Major-General R. E. Vyvyan, Miss J. Collins (representing Admiral Collins), Mrs. Leslie, Mrs. Simpson, Mrs. N. Bainbridge, Mrs. N. A. Smith (representing Mr. Fred Hallett), Lieut.-Colonel F. V. O. Beit, Messrs. Goatcher, R. Keenan, Mr. and Mrs. L. Bliss, Mrs. Everett, Mr. and Mrs. Bergström, Mr. Whitney, Mr. Ayres, Miss Blunden, Mr. L. C. F. Robson (Clerk, Worshipful Company of Farriers).

Final Year Students.—Mr. J. R. Wells (President of the Royal Veterinary College Students' Union), Messrs. Abdel-Baki, Ansell, Ashoub, Asthana, Baldwin, Barton, Breese, Brocklesby, Bywater, Downes, Epps, Fry, Miss Hammond, Messrs. Hampshire, Holmes, Keep, Miss Levens-Ing, Messrs. McVoy, Maynard, Mears, Mr. and Mrs. Nestel, Messrs. Olorenshaw, Simpson-White, Tiffin, Miss Waterlow, Messrs. Wilkins, Alexander, Arnold, Cansfield, Hambrook, Roberts, Miss Smith, Messrs. Stalbow, Thursby-Pelham, Waller, Walter, Hayes, Eden.

Students from Camden Town.—Miss Rawson-Shaw, Messrs. Fenton, Clarke Lewis (representing U.F.A.W.), Derbyshire, Rainger, Wade, Gray, Pope, Pocock, Jones.

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MEMORIAL SERVICE

The Memorial Service for the late Professor J. B. Buxton will be held at the Church of St. Mary Woolnoth at 11.45 a.m. on Wednesday, June 23rd, 1954.

The Church is at the corner of Lombard Street and King William Street, close to the entrance of the Bank Underground Station.

HOSPITALITY REQUIRED

An Austrian woman student of the Veterinary College, University of Vienna, has written asking if she could see practice both in England and Scotland during the summer vacation this year, between July 15th and September 15th. In return for hospitality would be willing to help in any way she could.

Members who may be good enough to help the student are asked to write to the General Secretary, B.V.A., 7, Mansfield Street, London, W.1.

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VETERINARY EXAMINATION OF HORSES ARRIVING FROM IRELAND

The Minister of Agriculture announced in the House of Commons on May 27th that he has made an Order requiring horses (with certain exceptions) arriving by sea from Ireland to be examined by a veterinary officer of the Ministry before being allowed to proceed on their journey from the port of arrival. The purpose of the Order, which will come into operation on June 25th, is to ensure that the horses are still in a fit state to continue their journey by road or rail after the sea passage to this country.

Racehorses accompanied by a certificate of the Turf Club of Ireland will be exempted from this veterinary examination, as will other horses intended for breeding, racing, jumping or exhibition if accompanied by a permit issued in advance by the Ministry. Applications for permits should be made to the Ministry's Animal Health Division, Hook Rise, Tolworth, Surbiton, Surrey, by the intending importer or exporter at least 14 days before it is intended to ship the horse.

After June 24th horses from Ireland may be landed only at the following approved ports: Glasgow, Greenock, Ayr, Heysham, Birkenhead, Liverpool (only for horses with Turf Club certificates or Ministry permits), Preston, Holyhead and Fishguard.

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OPEN DAY AT A.H.T. POULTRY RESEARCH STATION

A very well-attended Open Day was organised by the Poultry Research Station of the Animal Health Trust on May 25th. The date coincided with the flag day in support of the British Empire Cancer Campaign. It was natural, therefore, that much attention should be concentrated on the work being done on avian tumours in connection with research into the various manifestations of the leukosis complex. While a great deal has yet to be done, it was encouraging to learn that certain treatments, while not preventing ultimate death in affected chicks, have had the effect of delaying the development of avian tumours, the work on which is regarded as having a bearing on cancer research.

The research on artificial insemination in birds in which the Station has played a pioneer part is regarded as having immense possibilities for the future. It was reported that everything now hinges on the practicability of the dilution and storage of the semen. After six hours in storage, and inseminating at three-day intervals, a fertility rate of nearly 80 per cent. had been obtained.

The work of Dr. H. Williams Smith on fowl typhoid, about which he recently published a preliminary paper in the *Record*, brought him many congratulations from visitors.

Mr. Hugh Finn, Chairman of the Trust's Poultry Committee, reported that the Agricultural Research Council was prepared to give greater financial support to the Station than in the past, but he appealed to the industry to contribute £10,000 yearly to enable the Station to retain its independent status.

Dr. R. F. Gordon, Director of the Station, who welcomed the guests and who was warmly congratulated on all hands for the personal part he had played in bringing the Station to its present standard of usefulness to the industry, thanked donors of equipment and other gifts which had greatly facilitated the work. Dr. W. R. Wooldridge, the Trust's founder and Scientific Director, said that the success of the Station had depended almost entirely upon the energy and hard work of Dr. Gordon and his staff. Until its establishment work on poultry had been regarded merely as an ancillary to research on livestock generally.

"This Station," Dr. Wooldridge said, "has made such a success that it is essential in the national interest that it should be developed further. The Trust desires that development. It is planning, in association with the Agricultural Research Council, that such development should take place."

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

ANTHRAX:

Derbys.—New Inn Farm, Eastmoor, Chesterfield (May 24).

Lanark.—Overton Farm, Crossford, Carluke (May 26).

FOWL PEST:

Essex.—High Acre, Nobles Green Lane, Rayleigh (May 22).

Herts.—Cottage Farm, Moys Lane, Barnet (May 27).

Lancs.—Hillthorpe, Knowle Lane, Little Hoole, Preston (May 24); Leal Cottage, Dob Lane, Little Hoole, Preston (May 26).

Norfolk.—Upland Farm, Denton, Harleston (May 24); Glebe Farm, Denton, Harleston (May 26).

SWINE FEVER:

Berks.—Shinfield Court, Three Mile Cross, Reading (May 25).

Cambs.—Wort's Farm, Landbeach (May 22); 66, Station Road, Impington (May 26); Bedford Bank Farm, Manea Fifties, Manea, March (May 27); 16, High Street, Manea, March (May 28).

Ches.—No. 5, Smallholding, Highfield Estate, Levenshulme (May 24).

Derbys.—Amber Hill Farm, and Buildings at Green House, Ashover, Chesterfield; Sheffield Road, Chesterfield (May 24).

Glamorgan.—Canal Allotments, Rhydfelan, Pontypridd (May 22); Ty-Isaf Farm, Tonteg, Pontypridd (May 26).

Gloucs.—College Farm, Dumbleton (May 24); Manor Farm, Aston-on-Carrant, Tewkesbury (May 28).

Herts.—Fearney Hill Farm, Barnet (May 26).

Lancs.—Rainford House, Ormskirk Road, Rainford, St. Helens (May 22); 4, Station Road, Huyton, Liverpool (May 28).

Leics.—61, Augburn Road, Blaby, Wigston (May 25).

Lincs.—Sawcliffe Farm, Roxby, Scunthorpe (May 22); Tingles Farm, Darngate Road, Holbeach (May 24); 1, West Street, Roxby, Scunthorpe (May 27).

Middx.—Allendale, East Road, New Southgate, N.11 (May 26).

Montgomery.—Penarth, Newtown (May 22); Glan-Vyrnwy, Llansantffraid; Gartheilin, Dolfor, Newton (May 27).

Norfolk.—Church Farm, Coltishall, Norwich (May 25); "Glen Acre," Cock Street, Barford, Norwich (May 26); 15, Langley with Hardley, Norwich (May 27).

Notts.—Gravel Pit Piggeries, Gamston Lane, Gamston, Retford (May 24).

Salop.—Ruewood, Wem (May 22); The Moss Farm, Webscot, Myddle, Shrewsbury (May 24); Chemistry Farm, Whitchurch (May 25); Tedsmere Farm, Baschurch, Shrewsbury (May 28).

Suffolk.—Friesland Farm, Burnt Fen, Bury St. Edmunds (May 24); The Hostel and Honey Tye Farm, Leavenheath (May 27).

Wilts.—Bowden Park Farm, Corsham (May 26).

Worcs.—The Bungalow, Mill Lane, Cheltenham Road, Evesham (May 26).

Yorks.—11, Stansfield Row Piggeries, Leeds, 4 (May 24); Finsdale Quarry Piggeries, Morley, Leeds; Melton Hill Farm, Melton, North Ferriby (May 26); 14, Stansfield Row Allotments, Leeds, 4 (May 28).

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HOLIDAY IN SWITZERLAND

A Swiss veterinary surgeon offers his flat for use by an English veterinary surgeon for a holiday from about July 23rd to August 23rd this year. The flat is in Neuchâtel, with a view of the lake and the Alps from a large terrace; there are two rooms and a hall, kitchen and bathroom, which would be suitable for a married couple with one or two children. The price asked is 380 Swiss francs (about £31) for the month.

If any member is interested in this possibility, please write to the General Secretary, B.V.A., 7, Mansfield Street, London, W.1, from whom further particulars may be obtained.

NEW ADVISORY COMMITTEE TO THE B.B.C.

The Royal College of Veterinary Surgeons is represented on a new committee which has been set up by the B.B.C. to advise on matters of advertising. This panel will be known as the "General Advertising Advisory Committee to the B.B.C." and its aim will be to preserve the ethical aspect of advertising, and to make sure that correct descriptions are applied to all goods. Members will meet once a quarter, or more often if necessary, but the individual organisations will always hold themselves open to consultation about commodities with which they are concerned.

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AREA ERADICATION PLAN FOR TUBERCULOSIS

We reproduce below the Ministry of Agriculture statement showing the number of cattle on March 31st, 1954, in counties constituting a separate Attested Area, or included wholly in an Attested Area ; these figures are shown as corresponding with, instead of varying slightly from, the number of cattle on June 4th, 1953.

The number of Attested Herds on March 31st, 1954, was as follows :—

England	..	56,072
Wales	..	29,652
Scotland	..	29,327
		115,051

and, in addition, there were 2,690 Supervised Herds containing 80,000 cattle. These herds need only one clear tuberculin test in order to qualify as Attested Herds.

	Total cattle on June 4th, 1953	Cattle in Attested Herds and Areas	
		Number	Percentage of total cattle
ENGLAND			
Bedford	44,785	13,650	30·5
Berkshire	88,816	56,820	64·0
Buckinghamshire	114,906	42,950	37·4
Cambridge	31,097	11,610	37·3
Isle of Ely	21,513	2,310	10·7
Chester	247,876	79,200	32·0
Cornwall	277,358	80,200	28·9
Cumberland	242,400	159,850	65·9
Derby	187,772	41,740	22·2
Devon	420,693	150,880	35·9
Dorset	162,530	87,760	54·0
Durham	118,862	42,880	36·1
Essex	119,462	60,100	50·3
Gloucester	199,464	81,400	40·8
Hereford	138,807	51,840	37·3
Hertford	61,794	31,750	51·4
Huntingdon	28,118	5,920	21·1
Kent	112,724	51,200	45·4
Lancaster	285,802	98,480	34·5
Leicester	166,567	37,310	22·4
Lincoln (Holland)	28,982	1,790	6·2
Lincoln (Kesteven)	71,619	11,720	16·4
Lincoln (Lindsey)	165,547	22,350	13·5
London	—	—	—
Middlesex	7,790	3,000	38·5
Norfolk	191,855	69,210	36·1
Northampton	148,251	33,360	21·5
Soke of Peterborough	7,103	—	—
Northumberland	209,365	46,210	22·1
Nottingham	112,255	23,070	20·6
Oxford	107,580	51,070	47·5
Rutland	20,107	1,790	8·9
Salop	287,934	94,150	32·7
Somerset	331,272	150,860	45·5
Southampton	155,282	87,850	56·6
Isle of Wight	21,754	12,200	56·1
Stafford	241,598	48,360	20·0
Suffolk, East	77,796	36,830	47·3
Suffolk, West	40,247	18,080	44·9
Surrey	55,283	30,270	54·7
Sussex, East	106,738	45,150	42·3
Sussex, West	78,728	41,890	53·2
Warwick	146,999	45,880	31·2
Westmorland	102,352	82,200	80·4
Wiltshire	214,136	106,510	49·7
Worcester	99,917	29,170	29·2
York, East Riding	138,131	13,110	9·5
York, North Riding	254,870	78,350	30·7
York, West Riding	349,583	107,160	30·7
Isles of Scilly	558	558	100·0
ENGLAND : Total	6,844,978	2,480,088	36·2
WALES			
Anglesey	60,258	20,060	33·3
Brecon	48,688	37,270	76·5
Caernarvon	64,152	37,620	58·6
Cardigan	85,456	85,456	100·0
Carmarthen	147,428	147,428	100·0
Denbigh	105,047	51,890	49·4
Flint	62,220	18,030	29·0
Glamorgan	78,590	28,670	36·5
Merioneth	42,865	34,220	79·8
Monmouth	71,363	24,660	34·6
Montgomery	102,279	72,110	70·5
Pembroke	110,519	86,980	78·7
Radnor	37,722	24,370	64·6
WALES : Total	1,016,587	668,764	65·8
ENGLAND AND WALES : Total	7,861,565	3,148,852	40·1
SCOTLAND			
Aberdeen	230,899	62,070	26·9
Angus	71,499	25,500	35·7
Argyll	64,175	52,830	82·4
Ayr	160,843	160,843	100·0
Banff	55,303	14,970	27·1
Berwick	36,654	15,750	43·0
Bute	11,702	11,702	100·0
Caithness	26,393	11,310	42·9
Clackmannan	4,776	3,750	78·5
Dumfries	111,295	111,295	100·0
Dunbarton	18,041	16,900	93·7
East Lothian	17,357	7,600	43·8
Fife	68,269	43,800	64·2
Inverness	50,444	36,600	72·6
Kincardine	41,993	11,230	26·7
Kinross	10,002	6,670	66·7
Kirkcudbright	80,016	80,016	100·0
Lanark	98,060	92,980	94·8
Midlothian	25,497	17,340	68·0
Moray	29,600	13,320	45·0
Nairn	8,820	4,530	51·4
Orkney	47,899	20,960	43·8
Peebles	12,101	10,740	88·8
Perth	95,154	42,820	45·0
Renfrew	31,885	31,885	100·0
Ross-shire	38,061	21,800	57·3
Roxburgh	38,244	17,870	46·7
Selkirk	6,801	5,160	75·9
Stirling	43,340	37,700	87·0
Sutherland	8,766	7,240	82·6
West Lothian	16,543	12,910	78·0
Wigtown	79,084	79,084	100·0
Zetland	7,020	7,020	100·0
SCOTLAND : Total	1,646,536	1,096,195	66·6
GREAT BRITAIN : Total	9,508,101	4,245,047	44·6

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MEAT INSPECTION

A case concerning meat inspection which will be of considerable interest to members of the profession has just closed after nearly two years' dispute between a farmer and the Leyburn Rural Council. Briefly the circumstances were as follows :—

In August, 1952, the farmer, Mr. James Ryde, of Bellerby, called in a veterinary surgeon to inspect a cow which had injured its back. The cow was being fattened for grading and the veterinary surgeon expressed the view that it would not fatten much more in view of its injuries, and in consequence the cow was sent to Leyburn slaughterhouse as a casualty.

On the following day the Leyburn Rural Council sanitary inspector condemned the carcase. Mr. Ryde called in his veterinary surgeon, who, after inspection, expressed the view that he considered the carcase fit for human consumption, and he gave a certificate to that effect. The sanitary inspector declined to give way and the carcase was later inspected by a magistrate, who received the opinions of the sanitary inspector and of the County Veterinary Officer, who had been called in as an expert witness at the suggestion of the local branch of the National Farmers' Union. Later the carcase became decomposed and the Rural Council made an offer of 2½d. per lb., that being the value of the condemned carcase, while the farmer claimed 10½d. per lb., the price of the graded carcase.

The parties being unable to come to terms, the Ministry of Housing and Local Government was appealed to to appoint an arbitrator, but eight months elapsed without such an appointment being made. At last the National Farmers' Union appealed directly to Sir Thomas Dugdale, who referred the matter to the Ministry of Food.

The Ministry has recently agreed to pay the farmer the price of a sound carcase, thus upholding the opinion expressed by the veterinary surgeon.

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ERRATA.—We regret, in our issue of May 22nd when reference was made in the Notes and News to Mr. H. F. M. Aitken's civic honour, that it was not made clear he is President-Elect of the North of Scotland Division of the Association.

It is regretted also that in the issue of May 29th a printer's error caused Figs. 1 and 2 in Mr. P. Stuart's article to be placed in the wrong relative positions.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

THE MARKETING AND TRANSPORT OF ANIMALS

Sir,—In his letter Mr. MacFarlane says that in some local markets " the handling of animals is sometimes inhuman in the extreme." Few will accept this statement, especially those connected with markets and marketing. The livestock auction is open to all (with the exception, possibly, of small children), and anyone can attend to buy, sell or just look on. These people are ordinary decent members of the public who would not tolerate, under any circumstances, extreme and inhuman cruelty to animals.

Three items are mentioned in his letter as being " particularly bad and in need of improvement."

The first is the marketing of very young calves. Everyone will agree that the newly born calf in a market is an object of pity. The exhibitor of such a calf (without the dam) is, of course, liable for prosecution. A sure method of improving the lot of week-old calves is for vendors to keep them until they are older.

The case of the five calves who broke their legs while being driven with sticks down a ramp is deplorable. It is to be hoped that Mr. MacFarlane not only was a bystander but took an active part in bringing those responsible to justice.

His second point was the alleged cruelty to ponies at fairs. He objected to a drover moving round a bunch of ponies by means of cracking a whip in order to give, as he says, " an impression of life and spirit." Such ponies are capable of looking after themselves, and have probably done so since they were weaned. The whip is cracked to enable buyers to see what they are buying —the ponies need no artificial stimulus to spirit; they epitomise it. The writer must be short of subject matter to describe this incident as " inhuman in the extreme."

The loading and unloading of cattle at West Highland piers is his third point of complaint. It is perhaps unfair to comment on this without first-hand experience. As the handling of animals at West Highland piers must be a routine job, the handlers are most likely to know how best to do it. Could not the fact that a beast now and again finishes up in the water be, perhaps, due to the temperament of the animal?

Finally, an appeal is made to the auctioneers to ban from the market the unofficial drover " who for the price of a drink assists the farmer with his animals." It is doubtful whether a casual worker such as this gets much work in a market, as the official drovers, quite rightly, deem the chance of a tip to be their due. In any case, if a stockman is foolish enough to employ a man who " takes a positive pleasure in beating his animals," then the remedy lies with that stockman. Anyone seen behaving like this in a market would not be tolerated by the auctioneers in any event. From all aspects this situation is unrealistic. Few people would allow animals about to be sold, or newly bought, to be so treated—apart from the humane aspect of the matter.

As is well known, animals not used to handling can be expected to act strangely in strange surroundings. Market workers tackling this job have been the butt of the cruelty cranks for years. As drovers have not usually had the benefit of an education as good as that of their critics, they are easy meat—as they cannot answer in other than their own forceful language! If the critics' arguments are worth anything, then their best plan is to get their jackets off and go droving themselves. They will find, mostly, that the drover is a different type of man from the villain described.—Yours faithfully, A. K. KIRKWOOD, 14 & 16, Queen's Road, Reading. *June 1st*, 1954.

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" CHRONIC " COPPER POISONING OF SHEEP

Sir,—Mr. D. D. Ogilvie, in his article " ' Chronic ' Copper Poisoning of Sheep " (*Vet. Rec.*, May 15th, 1954), reviews relevant publications which mainly describe cases occurring abroad and comments on the paucity of records.

My clinical communication (*Vet. Rec.* (1945). **57.** 581) described a case in Kent orchards sprayed with Bordeaux mixture which parallels his observations and which he may have overlooked. A brief résumé may serve to emphasise a similar sequence of events.

The weather conditions of partial drought were similar. Onset of symptoms (inco-ordination and weakness) was delayed, the first losses occurring about 14 to 21 days, and the last 70 days, after first access. Death then followed within 24 to 48 hours, *post-mortem* lesions being almost identical with those Mr. Ogilvie describes.

The susceptibility of a group of bought-in tegs seemed to be less than that of the indigenous flock. Both groups ran together, but the bought-in sheep were in better condition. In contrast to Mr. Ogilvie's experience, the affected group obviously lost weight, although this may have been due to poor nutrition.

Liver analyses of two specimens revealed 480 and 620 p.p.m. copper, the latter being from the sheep dying at 70 days. These figures were almost certainly on a " wet " basis, though not specified by the analyst, and are comparable with Mr. Ogilvie's records.

Our common findings emphasise the importance of permitting a good growth of grass before restocking. Orchards were not grazed for five days after spraying, the usual period of rest adopted for many years but inadequate under the peculiar circumstances prevailing that year.

Rain washing *per se* may not appreciably reduce risks, since these sprays are compounded so as to be virtually insoluble after drying.

No doubt readers can call to mind other conditions of an apparently acute nature, but which are really terminal symptoms of protracted sub-clinical disorders, some with origins even more obscure than copper poisoning. In these we must offer, when possible, advice to prevent such losses, a service which can be (and is) overlooked so easily.—Yours faithfully, I. H. FINCHAM, Ministry of Agriculture and Fisheries, Staplake Mount, Starcross, Devon. *May 25th*, 1954.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Sheep Scab	Swine Fever
16th to 30th April, 1954	18	1	24	—	88
Corresponding period in—1953	24	1	18	—	238
1952	39	43	8	—	49
1951	26	—	6	—	32
1st January to 30th April, 1954 ...	106	12	469	—	484
Corresponding period in—1953	350	25	210	—	1,018
1952	174	115	100	1	398
1951	194	17	457	4	280

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at April 30th, 1954, was as follows:—

England	Wales	Scotland	Total (Great Britain)
57,383	30,123	29,718	117,224

ADVERTISER'S ANNOUNCEMENT

' Combestrol '

Burroughs Wellcome & Co. announce the introduction of ' Combestrol ' brand Hexoestrol and Stilboestrol (Veterinary) in the form of 15 mg. implantation products for the chemical caponisation of poultry. Trials have shown that ' Combestrol,' containing both hexoestrol and stilboestrol gives better all-round caponising results than either oestrogen used alone.

' Combestrol ' is issued in containers of 25, 100 and 1,000.